

APPLIED SCIENCE.

HAY-CAKES FOR HORSES.—Hay-tablets, prepared in the following manner, have been employed in France for some time, as a convenient and portable feed for horses. Hay and straw, very finely cut, are well mixed with crushed oats or rye, and moistened with a solution of rapeseed or linseed oil, and the mass again well worked, and then formed into tablets under pressure.

PASTE FOR LABELS ON BOTTLES, &c.—An excellent paste for fixing labels on glass, wood, or paper, may be prepared by dissolving 11 parts, by weight, of common glue, soaked a day before in cold water, 7 parts of gum arabic, and some rock candy, in 56 parts of water, at a gentle heat, with continued stirring until the mass is uniform. Labels brushed with this and dried will adhere firmly, if suitably moistened with saliva when used.

VARNISH FOR ALCOHOL CASKS.—Varnishing the interior of clean, dry casks with the following preparation is said to close the crevices and pores of the wood, and to render them perfectly tight for alcohol, as the material oxidizes soon after drying, and becomes insoluble in alcohol, and does not scale off:

Dissolve 2 pounds of leather clippings (best, finely chipped, and previously boiled in water) in two ounces of oxalic acid and four pounds of water, on a water bath, with continued stirring, care being taken not to prolong the operation more than necessary, and dilute the solution gradually with six pounds of warm water.

A NEW MATERIAL FOR MODELING (Plastilin).—A new plastic material for modeling, invented by Giudice of Genoa, has been adopted for figures and ornaments in the modeling school of Genoa, as well as by many sculptors. It is said not only to remove some of the difficulties of modeling, but to increase the facility of the process. It is lighter than clay, having a specific gravity of 1.39, and does not shrink like clay when dried, nor harden like wax, but retains its plasticity and softness at all times. It is insoluble in water and contains no water, which, by evaporation at ordinary temperatures, might prove injurious to the health. Its great superiority is especially apparent in modeling colossal figures. It is sold of four grades according to softness, No. 1 being the softest.

PHOTOGRAPHIC MULTIPLICATION OF DRAWINGS, &c.—Benneder states that paper, prepared as follows, costs but about one-sixth as much as the ordinary chloride of silver paper, and is as well adapted to the multiplication of drawings, and is simpler in its manipulation. A solution of bichromate of potash and albumen or gum, to which carbon, or some pigment of any desired shade, has been added, is brushed, as uniformly as possible, upon well-sized paper by lamp-light, and the paper dried in the dark. The drawing, executed on fine transparent paper (or an engraving, or wood-cut, &c.), is then placed beneath a flat glass upon the prepared paper, and exposed to the light for a few moments, and then placed upon the intensity of the light. The drawing is removed from the paper by lamp-light, and after washing the latter with water, a negative of the drawing remains, since the portions of the coating acted on by the light become insoluble in water. From such a negative, any number of positives can be taken in the same way.

EFFECT OF TEMPERATURE ON THE CREAMING OF MILK.—The results of a series of experiments, carried on through several months, by exposing different portions of milk to temperatures of 40°, 57°, and 74°, and determining the amount of fatty matter still present after various times of exposure, are embodied in a report by Schubert, from which it appears that the separation of fatty matter from the milk was most rapid at 40°, but that it was more rapid at 74° than at 57°, the separation being more complete at 40° in 18 hours than it was at 57° after 20 hours. After 24 hours at 40°, only .92% per cent of the fatty matter remained in the milk, and while diminution of it continued up to 30 to 36 hours, it was so slight as to have no practical importance.

Tests made on a large scale of Schwartz's method of immersing the milk in deep vessels in ice-water, showed that it produced the largest yield of butter for equal measures of milk, and also that sweet cream afforded more butter than sour cream. The method possesses the additional advantage that the milk may be kept in a cool place for several days in the ice-water without the least injury, and will bear transportation to a considerable distance before becoming warm enough to change. Cheeses made from it are much better and less liable to spoil in keeping, and sugar butter made from sweet cream contains less milk-sugar and casein, according to the analysis made; it is consequently less liable to become rancid.

DOCUMENTS FOR POLITICIANS.

McPherson's "Handbook of Politics" for 1874 is to be issued soon after the adjournment of Congress. It has become an indispensable manual for politicians of all parties. The present volume contains the legislative history of the Salary Grab act and its repeal, together with statistics about mileage, back pay, etc. The interference in the internal affairs of Alabama, Arkansas, Louisiana, etc., is shown in the official reports made to Congress, and the records of the Attala, New-Orleans, and other Presidents' speeches, etc., are given fully, forgetting the Jones memorandum. Among other features are the chief decisions of the United States Supreme Court, amendments made, or pending, to the Constitutions of the several States; financial legislation, including the legislative history of the original Land-Grant act of 1862, etc.

New Publications.

APPLETON'S AMERICAN CYCLOPEDIA.—Revised edition. Entirely rewritten by the best writers ever selected. Printed from new type, and illustrated from several thousand engravings and maps.

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It sold itself to the last of two associate editors, after submitting to the public their conjoint labor, to be called a second time to go over the work, and to add his name to the record of success.

The construction of such a work is like the building of a great ship, on which hundreds of hamlets are visible daily. So this literary structure is slowly rising, like the gradual growth of a nation.

From The Christian Advocate and Journal.

The editor of Appleton's Cyclopedias, who are fortunately still in full vigor, have organized a staff and begun to work for a year or two past, a little more than half of which time has been spent in the construction of such a work as the building of a great ship, on which hundreds of hamlets are visible daily. So this literary structure is slowly rising, like the gradual growth of a nation.

From Rev. Henry Ward Beecher, in Christian Union.

It is a work creditable to the editor, the large and able staff of literary and learned men whom they, and the public, have had the pleasure of meeting, and the work done by them is well deserved.

The trustees of the College, the Regents of the University, the parents of the students, and the friends of education generally are specially invited to attend.

BY F. P. BARNARD, LL.D. President.

READY TO-DAY.

INHALATION OF THE LUNGS.

THERAPEUTICS AND CONSUMPTION.

BY PROF. LUDWIG EHLI.

Translated by authority of M. I. MANS and L. B. ST. JOHN.

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For Boys and Young Men—City.

COLUMBIA COLLEGE SCHOOL OF MINES.

Examinations for admission to the School of Mines of Columbia College will be held on MONDAY, June 22, at the College, East Forty-ninth, and Madison ave., beginning at 9 o'clock.

Candidates are required to pass the written examination.

BY F. P. BARNARD, LL.D. President.

FOR WASHINGTON FRENCH INSTITUTE.

For the benefit of the French Institute, a course of instruction for the benefit of those French students who have not yet completed their studies.

BY L. P. MARTIN, Esq.

The School will remain open during vacation, and the pupils will receive instruction during certain hours of the day. Terms moderate.

BY PROFESSOR V. PREVOST, Principal.

NEW-YORK UNIVERSITY.

The Annual Commencement of the University will be held on MONDAY, June 24, at 10 o'clock, in the Hall of the University.

REMOVAL.—The CHARLIER INSTITUTE.

For boys and Young Gentlemen now at Nos. 126 and 128 East Twenty-fourth-st., will remove next September to 38-west building West Fifty-eighth-st., on Central Park, near Sixty-eighth-st.

PROF. ERIC CHARLIER, Director.

Miscellaneous—City.

KINDERGARTEN REMOVED TO 44 EAST.

For Girls and Young Women—City.

EDWARD INSTITUTE.—Spring term.

For Boys and Young Men—Country.

BROWN UNIVERSITY, Providence, R. I.

The 10th annual COMMENCEMENT will occur this year on FRIDAY, June 22, at 10 o'clock, in the Hall of the University, and DAY and FRIDAY, June 23 and 26, and on FRIDAY, Sept. 4. Candidates will do well to be present on the first day, but those who are unable to do so may apply for admission to the examination on the second day.

EDWARD INSTITUTE.—Spring term.

For Boys and Young Men—Country.

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